

## ABSTRACT OF THE DISCLOSURE

A numerical controller for performing an machining operation by controlling relative position of a workpiece and a tool in synchronism with a rotational position of a rotational axis to which the workpiece or the tool is attached, without causing time delay of position control of the tool relative to the workpiece in varying a rotational velocity of the rotational axis. A rotational position  $\theta_i$  ( $i = 0, 1, \dots$ ) of a workpiece on the rotational axis, a position  $(X_i, Z_i)$  of the tool relative to the workpiece when the workpiece is at the rotational position  $\theta_i$ , and the rotational velocity  $V_i$  of the workpiece from the rotational position  $\theta_i$  to the rotational position  $\theta_{i+1}$  are set in advance. Time  $T_i$  required for rotating the workpiece from the rotational position  $\theta_i$  to the rotational position  $\theta_{i+1}$  at the rotational velocity  $V_i$  is obtained. Velocities  $V_{x_i}$  and  $V_{z_i}$  of the workpiece are obtained so that the position of the workpiece reaches the next set position  $(X_{i+1}, Z_{i+1})$  in the time  $T_i$ . Servomotors for the spindle, the X-axis and the Z-axis are driven at the set velocity or the calculated velocities to provide relative motions to the workpiece and the tool for the machining operation.